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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,166	01/15/2002	Erich Fuchs	Mo-6608/LeA 34,892	1859

157 7590 05/21/2003

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EXAMINER

LEE, RIP A

ART UNIT	PAPER NUMBER
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1713

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DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

mk-5

Office Action Summary

Application No.

10/053,166

Applicant(s)

FUCHS, ERICH

Examiner

Rip A. Lee

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 9, 10 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-12 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 and 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-8 and 11, drawn to a rubber mixture and its corresponding vulcanizate, classified in class 524, subclass 565.
 - II. Claims 9 and 10, drawn to a process for vulcanizing a rubber mixture, classified in class 525, subclass 329.1.
 - III. Claim 12, drawn to a roll covering, classified in class 428, subclass 500.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the claimed process can be used to make a materially different product such as a saturated olefin polymer. Also, the product as claimed can be vulcanized using sulfur or a difunctional crosslinking agent.

3. Inventions I and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant

case, the combination as claimed does not require the particulars of the subcombination as claimed because a roll covering may be comprised of a material other than that claimed, such as a polymer film. The subcombination has separate utility in the form of an extruded article such as a gasket or pipe.

4. Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). Whereas invention II relates to a process for vulcanizing rubber, invention III relates to a roll cover. Clearly, the two inventions have different functions and different effects.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

6. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II or Group III, restriction for examination purposes as indicated is proper.

7. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group III, restriction for examination purposes as indicated is proper.

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8. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

9. During a telephone conversation with Jennifer Seng on May 16, 2003, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-8 and 11. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9, 10, and 12 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 1-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,985,392 to Hert *et al.* in view of EP 0 933 381 to Fujii *et al.*

Hert *et al.* teaches a rubber composition comprising carboxylated nitrile rubber, 2 pw of silane, zinc acrylate, silica and peroxide to effect crosslinking (see Example 4). It is noted that Hert *et al.* uses the term “zinc acrylate,” instead of “zinc diacrylate,” as recited in the present claims. In view of the fact that zinc is divalent and acrylate is monoanionic, the skilled artisan would find it obvious that the two terms are synonymous. The reference teaches use of ZnO as the vulcanization accelerator, but it does not teach use of liquid acrylates.

The prior art of Fujii *et al.* relates to vulcanized carboxylated nitrile rubber compositions. The inventors explain that zinc oxide is an effective accelerator when employed with sulfur as the crosslinking agent. However, where peroxides are used, polyfunctional compounds such as ethylene glycol dimethacrylate, trimethylolpropane trimethacrylate, and polyethylene glycol dimethacrylate are crosslinking agents of choice. The skilled artisan, having read both references, would have found it obvious to use polyfunctional crosslinking co-agents in the composition of Hert *et al.*, and the skilled artisan would have expected such an embodiment to work. One would be motivated to modify the art because Fujii *et al.* teaches and suggests that said polyfunctional crosslinking agents are to be used with peroxide crosslinking agents. The combination is obvious because both inventions relate to carboxylated nitrile rubber compositions.

13. Claims 1-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,538,071 to Fuchs in view of Hert *et al.*

The prior art of Fuchs teaches a rubber mixture comprising one or more nitrile rubbers, metal salts of an acrylate, a liquid acrylate applied to a support, and filler (claims 1-4 and Examples). Silanes are also used in the compositions to improve adhesion between filler and rubber (col. 2, lines 64-66 and Example2). The inventors state that nitrile rubber includes various embodiments (col. 1, lines 45-47) as well as hydrogenated versions thereof (col. 1, line 50).

Fuchs is silent with respect to use of carboxylated nitrile rubber. Arguably, the generality of the term “nitrile rubber” of the claims encompasses species such as carboxylated nitrile rubber. Nonetheless, Hert *et al.* teaches a similar vulcanized composition made of carboxylated nitrile rubber metal acrylate salt, filler and silane. The skilled artisan would find it quite obvious to use the cure/additive package described in Fuchs, which is similar to that of Hert *et al.*, for carboxylated nitrile rubber because the skilled artisan would understand that the teaching of said cure/additive package is general and is thus applicable to various types of nitrile rubber. Since one having skill in the art would expect such an embodiment to work for all forms of nitrile rubber, one would be motivated to use it in a composition containing carboxylated nitrile rubber.

14. The prior art made of record but not relied upon is considered pertinent to the Applicant's disclosure. The following references have been cited to show the state of the art with respect to acrylate additives for nitrile rubber compositions.

U.S. 2002/0132892 to Fuchs

U.S. Patent No. 5,637,407 to Hert *et al.*

U.S. Patent No. 5,217,807 to Steiber *et al.*

U.S. Patent No. 4,987,192 to Oberster *et al.*

U.S. Patent No. 4,857,571 to Reiter *et al.*


U.S. Patent No. 4,826,910 to Schwarz

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (703)306-0094. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (703)308-2450. The fax phone number for the organization where this application or proceeding is assigned is (703)746-7064. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

ral

May 16, 2003


DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700